Exp 3:-

Understanding the Architecture of Pre-trained model.

Aim:-

To understand and implement transfer learning using a pre-trained ResNet 18 model for using classification on the (IFAR-10 dataset).

objectives:-

1.) Load and explore a pre-trained deep learning model (ResNet-18).

2.) fine-tune the model for a new dataset.

3.) Evaluate model performance using accuracy.

Pseudocode:-

1.) Import necessary libraries.

2.) Load (IFAR-10 dataset with transformation).

3.) Modify the final fully connected layer for 10 output classes.

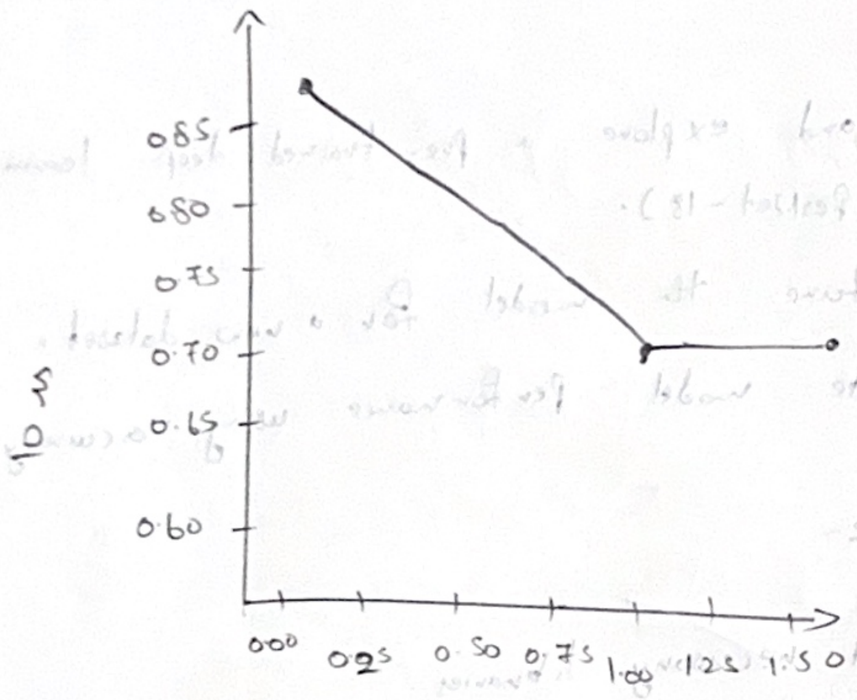
4.) Define loss function.

5.) Train the ~~model for~~ a few epochs.

6.) Plot training loss graph.

7.) Print observation and find results.

Training loss Vs Epochs



observations:

1.) The pre-trained ResNet 18 model converged faster because initial weights were already learned from ImageNet.

2.) Training loss decreased across epochs, showing effective fine-tuning.

3.) Accuracy improved even with few epochs and limited training.

Result:

Succesfully implemented a pre-trained ResNet model. The classification performance on the CIFAR-10 dataset using transfer learning. Demonstrated training time and improved model.